REMARKS

Claims 48 and 49 were added. No new matter was added. Thus, claims 13, 16-18, 20, 32, 35, 36 and 38-49 are pending. Independent claims 13, 35 and 47 were amended to overcome the rejection based on 35 USC 112, first paragraph. No new matter was added. Applicant respectfully submits that the claims of the present application are in condition for allowance.

Amendments to Claims

By way of background, house dust mites and bedmites (HDM) are known to thrive and proliferate (ie., grow by rapid production of new offspring) in bedding, upholstered articles and fibrous floor coverings due to an ample food supply of dead skin fragments (dander) that is continually shed by humans and/or pets on such articles. The excretions of HDM provide a major source of allergies and aggravate the conditions of asthma sufferers.

The present invention seeks to manufacture bedding, upholstered articles and fibrous floor coverings that enable improved living conditions for allergy and asthma sufferers. To accomplish this goal, the articles according to the present invention provide an environment in which HDM cannot thrive and proliferate (ie., an environment in which HDM starve).

Dead skin fragments, as shed, have a very low moisture content and a high fat content. As such, they are a poor food source for HDM in their as-shed condition. However, certain microscopic fungi grow on the dead skin fragments, absorb moisture from the atmosphere, and raise the moisture content of the dead skin fragments. In addition, the fungi reduce the fat content of the dead skin fragments and are responsible for generating B-group vitamins and

ergosterol. Thus, the dead skin fragments, as modified by particular fungi, become a suitable food source for HDM.

The present invention provides a method of controlling the proliferation of HDM in bedding, upholstered articles and fibrous floor coverings by incorporating a neutral organic fungicidal compound into a manmade fiber during the course of its manufacture. The neutral organic fungicidal compound is non-toxic to mammals and creatures other than fungi. The compound is located within the structure of the fiber and has anti-fungal activity against fungi of at least one of the groups aspergillus glaucus and aspergillus restrictus. The fiber is utilized to manufacture the bedding, upholstered articles and fibrous floor coverings.

The fungicidal compound does not kill HDM. Rather, it kills the fungi which are responsible for converting dead skin fragments into a suitable HDM food source. Thus, by eliminating a major HDM food source, the articles manufactured according to the present invention "control" HDM by essentially starving HDM that attempt to colonize the articles. This thereby creates an environment unsuitable for HDM proliferation.

An acaricide, by definition, is a chemical compound or substance that is lethal to mites. The fungicidal compound, spinning dope, manmade fiber, and product of the present invention do not contain, carry or have an acaricide. Rather, the compound according to the present invention has low toxicity to organisms in taxonomic kingdoms other than that to which fungi belong. For example, insects, HDM, and mammals, such as humans, belong to taxonomic kingdoms different to that of fungi. See the present application, as filed, on page 4, lines 3-15, which states, in full:

> "Insects such as HDM and mammals such as humans on the one hand and fungi such as Aspergillus spp. on the other hand belong to different taxonomic kingdoms. Many substances are known which are toxic to organisms within one kingdom but are effectively non-toxic to organisms within other kingdoms. The same is true, although to increasingly less degrees, between the lower taxonomic divisions beginning with phyla, classes and orders. **It is an advantage of the invention** that it can make use of antifungal compounds having low toxicity to higher mammals including humans and domestic animals and to other domestic pet creatures. The use of such compounds is accordingly **preferred**."

The "low toxicity" limitation disclosed on page 4, lines 3-15, of the present application, as filed, has been added into claim 47 and is stated in new claims 48 and 49. No new matter was added. In addition, see the present application, as filed, on page 5, lines 10-12, which discloses an "Example" of an acrylic fiber that contains 0.4% tolnaftate and that was prepared by the method disclosed in Example 1 of GB 2309461. The GB '461 reference, of which the Examiner is aware, states that an amount of milled tolnaftate is blended with an acrylic dope (93% acrylonitrile, 6% methyl acrylate and 1% AMPS) to provide a dope with 0.5% tolnaftate. An acaricide is not included in the list of ingredients stated in Example 1 of the GB '461 reference, and there is no disclosure in the present application of any procedure which would lead to the addition of an acaricide.

Further, the present application, as filed, states on page 5, lines 12-14, that the "Example" is commercially available under the trademark AMICOR AF. The use of AMICOR AF, AMICOR AB and a 50/50 combination of AMICOR AF and AMICOR AB is also disclosed in Table 2 on page 6 of the present application. In the Declaration of Roland Cox executed on January 12, 2004 and submitted to the U.S. Patent and Trademark Office on January 20, 2004, it is stated under oath that AMICOR AF is an acrylic fiber that incorporates tolnaftate and AMICOR AB is an acrylic fiber that incorporates triclosan. Neither includes an acaricide.

Accordingly, Applicant respectfully submits that the limitation that the present invention is non-toxic to organisms in taxonomic kingdoms other than the taxonomic kingdom including fungi is disclosed in the present application, as filed. No new matter was added.

Claim Rejection under 35 USC 112, first paragraph

> In the non-final Office Action dated July 27, 2006, the Examiner rejects claims 13, 16-18, 20, 32, 35, 36 and 38-47 under 35 USC 112, first paragraph, as failing to comply with the written description requirement.

The null statement with respect to an acaricide has been deleted from all the claims. Accordingly, Applicant submits that the 35 USC 112, first paragraph, rejection has been overcome.

New limitations stated in claims 47-49 are respectfully submitted as complying with the written description requirement for reasons stated above. For example, as stated on page 4, lines 3-15, of the present application, as filed, the antifungal compound of the present invention is non-toxic to organisms that are not within the same taxonomic kingdom as fungi. The present application specifically states that insects, HDM, and mammals, such as humans, belong to taxonomic kingdoms that are different to that of fungi.

Claim Rejection under 35 USC §103(a)

> In the FINAL Office Action dated April 19, 2006, the Examiner rejects claims 13, 16-18, 20, 32, 35, 36 and 38-46 under 35 USC §103(a) as being obvious over International PCT Publication No. WO 97/24484 of Kluft et al. in view of one or more of UK Patent Application No. GB 2,248,774 A of Barton et al., U.S. Patent No. 3,959,556 issued to Morrison, U.S. Patent No. 3,284,395 issued to Lowes, and UK Patent Application No. GB 2,309,461 A of Cox et al.

The primary reference, Kluft et al., discloses an article that is used to cover beds or mattresses and that contains at least one acaricide as an active ingredient. (See the Abstract, lines 1-3; page 4, lines 19-20; page 6, lines 1-4; and claim 2 of the English translation of Kluft et al.) Kluft et al. state that "one must kill the house dust mites in order to prevent allergies." (See page 3, lines 2-3, of the English translation.)

Applicant respectfully submits that Kluft et al. teach away from the claims of the present application. With respect to the use of a bactericide and/or fungicide without an acaricide, Kluft et al. teach on page 4, lines 2-9, of the English translation that:

> "... they do not offer any solution that could have as its target a fight against house dust mites, ... In this respect one should mention that the house dust mite is an arachnid, that is a being that is not comparable to an insect nor a bacteria, nor a fungus and that, for example, some products that are used as insecticides, bactericides or fungicides have very little effect, or none in this situation." [Emphasis Added.]

On page 4, lines 19-20, Kluft et al. state that:

> "The house dust mite biocidal agent includes as the active ingredient at least one acaricide."

Therefore, Kluft et al. teach that a fiber, and product made from the fiber, must have an acaricide to have any effect on the fight against mites and the ability to prevent allergies. This is clearly stated by the Kluft et al. reference.

Accordingly, Applicant respectfully submits that regardless of which secondary reference the Examiner combines with Kluft et al., the result is that one of skill in the art would create a fiber containing an acaricide. The present invention achieves an unexpected result when viewed in light of the teachings of Kluft et al. since it has been proved by evidence submitted with previous Declarations of Cox that the present invention is effective at controlling mites despite not containing an acaricide or other substance that is toxic to insects, HDM, or other organisms in taxonomic kingdoms to which fungi do not belong.

For at least this reason, Applicant submits that the claims of the present application are patentable and non-obvious over the Kluft et al. reference in combination with any of the cited secondary references. Kluft et al. fail to disclose a step of producing a fiber and product without an acaricide or other substance that is toxic to HDM. Kluft et al. teach away from producing such a fiber and product for mite control and state that such a product would have little or no effect on mites or preventing allergies. "Teaching away" is the antithesis of the art suggesting that the person of ordinary skill go in the claimed direction. "Teaching away" from the art is a per se demonstration of lack of prima facie obviousness.

Further, the secondary reference, GB 2248774 A of Barton, is discussed in the specification of Kluft et al. on page 3, line 12, to page 4, line 20, of the English translation. With respect to Barton, Kluft et al. state that "they do not offer any solution that could have as its target a fight against house dust mites." In addition, Kluft et al. also state that "the known techniques

also have an unsound fixation." Accordingly, one of skill in the art following the teachings of Kluft et al. would avoid modifying Kluft et al. in view of Barton based on the statements expressly made in the Kluft et al. reference.

None of the secondary references, Barton, Lowes, Morrison or Cox (GB '461), discloses a method for controlling house dust mites and bedmites. This is confirmed by the specification of Kluft et al.. Barton and Lowes relate to inhibiting the growth of bacteria, not fungi. Cox (GB '461) is limited to the production of socks, athletic apparel, awnings and tents. The Morrison patent relates to controlling body odors and infections (see column 1, lines 24-28, of Morrison).

Accordingly, Applicant respectfully requests reconsideration and removal of the 35 USC 103(a) obviousness rejection of claims 13, 16-18, 20, 32, 35, 36 and 38-46.

Conclusion

In view of the above amendments, Applicant respectfully submits that the rejections have been overcome and that the present application is in condition for allowance. Thus, a favorable action on the merits is therefore requested.

Please charge any deficiency or credit any overpayment for entering this Amendment to our deposit account no. 08-3040.

Respectfully submitted,
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